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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/806,560	03/30/2001	Helmut Bechtel	PHD 99,103	1464

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER	
DONG, DALEI	
ART UNIT	**PAPER NUMBER**
2875	

DATE MAILED: 01/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/806,560	BECHTEL ET AL.	
	Examiner	Art Unit	
	Dalei Dong	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 December 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 January 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/806,560.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-5 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,100,633 to Okumura.

Regarding to claims 1-3 and 5 Okumura discloses in Figure 1, "a surface discharge AC type plasma display panel (PDP) according to the present invention. As shown in the drawing, the PDP comprises a front substrate 1 ***(a transparent front plate)*** and a rear substrate 2 ***(a carrier plate)***. Ribs 3 ***(rib structure which divides the space between the carrier plate and the front plate into plasma cell)*** arranged in parallel to form stripes are formed on the rear substrate 2 in a manner to define stripe-like discharge cells. Also, stripe-like address electrodes 4 ***(one or more electrode arrays on the carrier plate)*** are formed between adjacent ribs 3 such that each discharge cell formed between adjacent ribs 3 is provided with the address electrode 4. Further, phosphor layers 5 are formed which cover the surfaces of the rear substrate 2, address electrodes 4 and ribs 3. The phosphor layer 5 ***(phosphor layer)*** contains a red-emitting phosphor, a green-emitting phosphor or a blue-emitting phosphor. On the other hand, formed on the front substrate 6 are stripe-like transparent electrodes 6 ***(one or more electrode arrays on the***

transparent front plate) extending in a direction perpendicular to the address electrodes 4 and bus electrodes 7 overlapping with the transparent electrodes 7 to lower the resistance of the transparent electrodes 7. The surface of the front substrate 1 is covered with a transparent dielectric layer 8 and a protective layer 9. The protective layer 9 consisting of, for example, MgO serves to improve the discharge characteristics. The front substrate 1 of the particular construction is disposed on the rear substrate 2 of the construction described above, followed by sealing the junction between the front and rear substrates. Further, a mixed gas ***(mixture of gases)*** such as He--Xe or Ne--Xe is sealed as a discharge gas in the discharge cells formed between the rear substrate 2 and the front substrate 1" (column 3, lines 33-60).

Okumura also discloses "In order to permit the light emitted from the phosphor to be transmitted efficiently to the outside, it is effective to dispose a reflective layer of a visible light between the phosphor layer and the rear substrate and between the phosphor layer and the rib. For increasing the reflection of the emitted light, it is desirable to form a visible light reflective layer over substantially the entire region between the phosphor layer and each of the other members of the PDP including the rear substrate, the address electrode and the rib. The materials effectively reflecting the visible light, which can be used in the present invention, include, for example, particles of MgO, MgF.sub.2, .alpha.-Al.sub.2 O.sub.3, MgAl.sub.2 O.sub.4, 3Al.sub.2 O.sub.3.5SiO.sub.2 and 2MgO.2Al.sub.2 O.sub.3.5SiO.sub.2. Particularly, MgO particles can be used as the materials effectively reflecting the visible light. It is desirable for these materials to have an average particle size of 10 to 200 nm ***(the powder having an average grain diameter***

of greater than 100nm and less than 1000 nm). The particles having an average particle size falling within the range noted above permit effectively scattering the visible light. Also, these materials are satisfactory in the electron emitting characteristics, compared with TiO.sub.2 used for forming a known white reflective layer. It follows that the materials used for forming the visible light reflective layer are also effective for facilitating the discharge. The visible light reflective layer should desirably have a thickness of 0.1 to 5 .mu.m, preferably 0.1 to 1 .mu.m ***(reflection layer has a layer thickness less than 1 um)***. Where the thickness is less than 0.1 .mu.m, the effect of reflecting the visible light cannot be obtained. Where the thickness exceeds 5 .mu.m, however, the discharge space is diminished, leading to a low brightness" (column 5, lines 27-59).

Okumura further discloses, "it is also possible to form a reflective layer of ultraviolet rays between the phosphor layer and the rear substrate and between the phosphor layer and the rib. Of course, the reflective layer should consist of substances capable of reflecting the vacuum ultraviolet rays and visible light. In the case of forming an ultraviolet reflective layer, the phosphor is excited from both rearward and sideward so as to obtain emission efficiently. It follows that the ultraviolet reflective layer contributes to the improvement of the density of excited light required for bringing about the microresonator effect. The substances effective for reflecting the vacuum ultraviolet rays include, for example, fluorides such as MgF.sub.2, LiF, CaF.sub.2, and YF.sub.3. The average particle size of the fluoride particle should desirably be about 0.5 to 1 .mu.m. The fluoride particle meeting this requirement exhibits a high capability of

emitting secondary electrons and also produces the effect of lowering the discharge voltage. Further, a thin film of a metal exhibiting a high reflectance in a VUV region such as Ir can be used as the ultraviolet reflective layer" (column 7, lines 49-67).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the ultraviolet ray reflective layer of Okumura at the front surface of the plasma display of Okumura in order to improve the density of excited light required for bring out the microresonator effect.

Regarding to claim 4, Okumura discloses the claimed invention except for the reflection layer is comprised of multilayer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have manufacture the reflection layer utilizing multilayer, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman,* 168 USPQ 177, 179.

Response to Arguments

3. Applicant's arguments with respect to claims 1-5 have been considered but are moot in view of the new ground(s) of rejection.

In response to Applicant's argument that the reflective layer of Okumura fails to exhibit UV reflecting characteristic; Examiner asserts that as disclosed by the Applicant that MgO. MgF.sub.2, .alpha.-Al.sub.2 O.sub.3 exhibits the properties of reflective UV light as well as Okumura discloses the UV reflective layer can be composed of

MgF.sub.2. Thus, Examiner asserts that the reflective layer of Okumura composed of MgO, MgF.sub.2, .alpha.-Al.sub.2 O.sub.3 does exhibits the properties of reflective UV lights.

Also, in response to Applicant's argument that Okumura fails to teaches the particle size of the reflective layer, Examiner asserts that it would have been obvious to one having ordinary skill in the art at the time the invention was made to have adjust the value of the particle size between 100 nm to 1000 nm as disclosed by the Applicant in the specification of the Application, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller,* 105 USPQ 233. Applicant also fails to show testing nor analysis to demonstrate the criticality of the claimed particle size of 200 nm to 1000 nm, instead Applicant discloses in Table 1, 100 nm particle size achieve the highest reflectance for the claimed UV wavelength range of 147 nm for element SiO_2; further the testing shown in Tables 1 and 2 only showed particle size up to 500 nm and not 1000 nm as claimed by the Applicant.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (571)272-2370. The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571)272-2378. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

D.D.
January 12, 2004